

NASA News

National Aeronautics and
Space Administration



Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337-5099

For Release:
March 4, 2004

Keith Koehler
Telephone: 757-824-1579
Keith.A.Koehler.1@gsfc.nasa.gov

RELEASE NO: 04 - 03

Aerosonde UAV Completes First Operational Flights at NASA Wallops

A small, unmanned airplane recently conducted flights along the Virginia coast showing its capability to support NASA science missions.

NASA and Aerosonde North America, Inc., conducted several flights of the Aerosonde unmanned aerial vehicle (UAV) February 20 through 27.

The flights showed the ability of the small UAV to operate from the runways of the NASA Goddard Space Flight Center's Wallops Flight Facility, Wallops Island, Va.; fly a predetermined flight mission; and gather scientific data. The flights operated in the controlled airspace at Wallops, but the concepts demonstrated could be applicable to future missions over less tightly controlled airspace.

The Aerosonde UAV flew a NASA instrument that measures Global Positioning System (GPS) signals reflected from the Earth surface. Using these reflected signals over land, scientists can infer surface soil moisture and over water derive winds speeds and surface roughness or waves heights.

Stephen Katzberg, NASA Langley Research Center's principal investigator for the GPS reflection experiment, said, "The Aerosonde UAV with the NASA GPS reflectometer performed well together and we are currently extracting surface reflection information from the flight data."

He noted that the instrument has flown on manned aircraft but this is the first time it was flown on a UAV. "The ability to fly this instrument on the Aerosonde will allow us to fly into or around weather systems such as tropical storms without endangering humans," Katzberg said.

-more-

In addition to the NASA instruments, Aerosonde North America flew a suite of instruments to measure temperature, pressure, humidity and wind speeds in the atmosphere.

Maurice Gonella, Aerosonde UAV Facility manager at Wallops, said, "We are pleased to be able to collaborate with NASA in proving the operational capability of the GPS instrument on a UAV. These flights open the door to develop and fly other science instruments around the world to study Earth's systems."

The Aerosonde UAV offers scientists the opportunity to conduct long duration missions by flying continuously for more than 30 hours.

Long endurance UAVs, such as the Aerosonde UAV, have the potential to fill the gap between satellites and surface networks in the integrated global observing system. The in-situ measurements gathered by instruments on these UAVs are used in conjunction with the larger global datasets obtained from satellites.

Jay Pittman, chief of the Wallops Range and Mission Management Office, said, "These operational flights are a major step in developing the UAV for scientific studies. In cooperation with Aerosonde and the scientific community, we are excited about the opportunities small sensors and UAVs offer in Earth science research."

"UAVs open the door to completely new mission concepts that include so-called "sensor web" missions where UAV platforms work collaboratively to gather scientific data. We look forward to conducting these flights world-wide and to contributing to the Agency's ability to utilize next-generation platforms in support of its missions," said Pittman.

NASA and Aerosonde are determining the feasibility of conducting Earth science research using small, long endurance UAVs through a cooperative agreement.

For information about NASA on the Internet, visit

<http://www.nasa.gov>

For information about the Aerosonde UAV, visit

<http://www.aerosonde.com>